MAL'TSEVA, L.F.; LAPSHOV, Yu.K.; MARMER, E.N.; SAMSONOV, G.V.

High temperature heating elements of niobium and zirconium carbide. Porosh.met. 5 no.11:87-93 N '65.

(MIRA 18:12)

1. Institut problem materialovedeniya AN UkrSSR i Vsesoyuznyy nauchno-issledovatel'skiy institut elektrotermicheskogo oborudovaniya. Submitted March 4, 1965.

54100

S/226/62/000/001/007/014
I003/I201

Authors: Mal'tseva, L. F. and Marmer, E. N.

Title: DETERMINATION OF THE ELECTRICAL PROPERTIES OF GRAPHITE AT HIGH TEMPERATURES.

Periodical: *Poroshkovaya metallurgiya*, no. 1(7), 1962, 50-56

Text. A procedure and apparatus for the determination of the temperature dependence of the specific conductivity of brands "A"(A), "Б"(B), "*B*"(V) and "Г"(G) graphites up to 2500° are described. From the data obtained formulae are represented for the calculation of specific conductivity over the temperature range 1000° to 2500°. The specific conductivity of the graphite of each of these classes is about the same at 20°C and 1500°C. Moscow electrode plant specifies the resistance of graphite of brand "B" as 14-20 ohm. mm^2/m. There are 2 figures and 6 graphs

Association: Vsesoyuznyy nauchnoissledovatlskiy Institut electrotermicheskogo oborudovaniya (All-Union Scientific Research Institute of Electrothermic Equipment).

Submitted: May 15, 1961

Card 1/1

MAL'TSEVA, L. F., and MARMER, E. N.

"Results of the investigation of electrical and heat conductivity of certain refractory compounds"

Seminar on production methods, physical properties, and electron structure of refractory metals, compounds, and alloys, organized by the Institute of Powder Metallurgy and Special Alloys AS Ukr SSR, Kiev, 25-29 April 1963.
(Teplofizika vysokikh temperatur, No. 1, 1963, p. 156)

ASTRINSKIY, S.D., prof.; MAL'TSEVA, L.B.

Differential diagnosis between ovarian apoplexy and acute appendicitis. Sov. med. 25 no.3:28-35 Mr '61. (MIRA 14:3)

1. Iz kafedry akusherstva i ginekologii (zav. - prof. S.D.Astrinskiy) Severoosetinskogo meditsinskogo instituta.
(OVARIES--DISEASES) (APPENDICITIS)

MAL'TSEVA, L.B., assistent

Chorionic epithelioma following excision of the tube in ectopic pregnancy. Akush. i gin. 35 no.1:111-112 Ja-F '59.
(MIRA 12:2)

1. Iz kafedry akusherstva i ginekologii (zav. - prof. S.D. Astrinskiy) Severo-Osetinskogo meditsinskogo instituta.

(PREGNANCY, ECTOPIC, surgery,
salpingectomy, postop. choriocarcinoma (Rus))
(CHORIOCARCINOMA, case reports,
post-salpingectomy in ectopic pregn. (Rus))

MAL'TSEVA, L.A., vrach

Necrotic processes in the oral cavity in chronic cardiovascular insufficiency. Vop. obshchei stom. 17:84-85 '64.
(MIRA 18:11)

VDOVENKO, V.M.; MAL'TSEVA, L.A.

Heats of solution of uranyl nitrate hydrate crystals in water and in diethyl ether. Trudy Radiev.inst.AN SSSR. 8:25-29 '58. (MIRA 12:2)

(Uranyl nitrate) (Heat of solution) (Ethyl ether)

DRUMYA, Anatoliy Vasil'yevich, kand. geol.-miner. nauk; USTINOVA, Tat'yana Ivanovna, kand. geogr. nauk; SHCHUKIN, Yuriy Konstantinovich; MALINSHTEYN, A.Ya., kand. geol.-miner. nauk, red.; MAL'TSEVA, L., red.

[Problems of the tectonics and seismology of Moldavia] Problemy tektoniki i seismologii Moldavii. Kishinev, Kartia moldoveniaske. No.2. 1964. 119 p. (MIRA 19:1)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001031900021-6

MAL'TSEVA, K.V.

IZUCHENIYE PROIZVEDE-NIY N.A. NEKRASOVA V SHKOLE. MOSKVA, IZD-VO AKADEMII PEDAGOG. NAUK. RSFSR, 1956

271 p.

At head of title: AKADEMIYA PEDAGOGICHESKIKH NAUK RSFSR. INSTITUT METODOV OBUCHENIYA.

ALALYKIN, G.S., inzh.; MAL'TSEVA, K.A., inzh.

Pulse control of temperature and composition constancy of combustion products in an experimental non-oxidizing heating furnace without muffles. Stal' 25 no.4:369-370 Ap '65.
(MIRA 18:11)

L 10690-65

ACCESSION NR: AP5043256

diminished 0.02 oe, while the magnetic inclination increased 4°. On the Antarctic coast changes in the H value reach 0.02 oe, and those in the Z value reach 0.04 oe. The charts are useful in the solution of theoretical and practical problems in terrestrial magnetism for navigational purposes and can serve as a basis for comparison with data obtained by artificial earth satellites. Orig. art. has: 3 figures.

ASSOCIATION: Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR, Leningradskoye otdeleniye (Institute of Terrestrial Magnetism, Ionosphere, and Radio Wave Scattering, AN SSSR, Leningrad Division)

SUBMITTED: 04Nov63 ENCL: 00 SUB CODE: ES

NO REF SOV: 009 OTHER: 091 ATD PRESS: 3116

Card 2/2

L 10690-65 EWT(l)/TCC/EEC(t) Po-4/Pi-4 ASD(a)-5/BSD/RAEM(c)/ESD(t) GW

ACCESSION NR: AP5043256 S/0203/64/004/004/0773/0780

AUTHOR: Al'tshuler, L. I.; Mal'tseva, K. A.; Chuguryan, Z. S.; Shlyakhtina, A. F.

TITLE: World magnetic charts of the epoch 1960

SOURCE: Geomagnetism i aeronomiya, v. 4, no. 4, 1964, 773-780

TOPIC TAGS: geomagnetism, geomagnetic field, magnetic survey, world magnetic chart

ABSTRACT: World magnetic charts of the epoch 1960, which are more complete and more reliable than those of epoch 1955, are presented with explanatory text. Observations of the schooner "Zarya" have improved the accuracy of the charts of the ocean areas. Antarctic observations have yielded new information on the distribution of magnetic elements in the vicinity of the south geographic pole, the south geomagnetic pole, and the pole of relative inaccessibility. The new charts provide considerably more information on regions in the Southern Hemisphere. In the southern part of the Indian Ocean, for example, the horizontal component has increased 0.01 oe, the vertical component

Card 1/2

Mal'tseva, K.A.

37-11-18/18

AUTHOR: Al'tshuler, L.I., Vints, B.D., Mal'tseva, K.A., Chuguryan, Z.S. and Shlyakhtina, A.P.

TITLE: World Magnetic Maps for the 1955 Era (Mirovyye magnitnyye karty epokhi 1955 goda)

PERIODICAL: Trudy Nauchno-issledovatel'skogo instituta zemnogo magnetizma, 1957, Nr 11(21), pp. 229-236 (USSR)

ABSTRACT: World magnetic maps computed from extensive data show the characteristic existence of six world anomalies of the vertical component Z, two of which are in Asia and the rest in North America, the Pacific, and Iceland. Six world magnetic charts and maps are included in a supplement. There are 11 references, 5 of which are USSR, 5 English, and 1 German.

AVALIABLE: Library of Congress

Card 1/1

Mal'tseva, K. A.

37-11-17/18

AUTHOR: Al'tshuler, L.I., Vints, B.D., Mal'tseva, K.A., Chuguryan, Z.S., Shlyakhtina, A.P.

TITLE: Magnetic Surveys Outside the USSR (Magnitnyye s'yemki za predelami SSSR)

PERIODICAL: Trudy Nauchno-issledovatel'skogo instituta zemnogo magnetizma, 1957, Nr 11(21) pp. 190-228 (USSR)

ABSTRACT: A greatly needed catalog of magnetic values for the whole world resulted in an accumulation of 75,000 cards (each for a separate observation) of magnetic data, mostly declinations only. Europe leads with 289 sources of observations, the U.S.A. has 150, Asia 49, Africa 102, Australia 102, Oceania 26, and there are 72 miscellaneous sources. There are 690 references in the bibliography.

AVAILABLE: Library of Congress

Card 1/1

Alps, and Japan). Anomalies are evident also in Canada and the polar regions of North America, in Argentina, the Aleutians, the Philippines, Korea and Madagascar. Magnetic anomalies, it seems, are characteristic for many areas where a folding of the cenozoic zone and most recent volcanism have occurred, which includes the Pacific Ocean and Indonesia and part of the Mediterranean." (U)

Sam / N 1951

Included are world maps (1:50,000,000) of the magnetic intensity of the earth, the magnetic deflection, the horizontal and vertical components of the intensity of the magnetic field for the year 1955, the scheme of the magnetic survey (reflecting the number of points of the magnetic observations on 1:1,000,000 scale maps), separate maps of the magnetic survey of the Antarctic, and 6 maps of the Arctic and Antarctic territory. Shown on these maps are the magnetic deflection, the horizontal and vertical components of the intensity of the magnetic field for the territories of the southern and northern polar regions of the earth. In addition there is a map of the directional magnetic angles for the Arctic territory.

The method of compiling world magnetic maps is described, and a short description of the basic peculiarities of the earth's magnetic field is given. Instead of two ranges of extreme values of the vertical components (Z), which would be observed in the case of a field of an ideally magnetized sphere, on world maps the existence of three main extreme ranges is evident, two of which are found in the northern and one in the southern hemisphere. Isodynamic lines (Z) having the form of closed oval curves cover the larger part of the northern hemisphere. Such a considerable deviation from a field of uniform magnetization causes the formation of curved horizontal components and of the magnetic declination. A detailed study of the maps shows the presence of a number of local anomalies, the greatest number of which are revealed where there are continuous magnetic surveys (the anomalous regions of KMA - Kyrsk Magnetic Anomalies - to the north of Khar'kov, numerous anomalies in the territories of England, Norway, Sweden, Finland, Italy, the Western

MAL'TSEVA, K.A.

"World Magnetic Maps for the Period Beginning in 1955," by L. I. Al'tshuler, B. D. Vints, K. A. Mal'tseva, Z. S. Chuguryan, and A. P. Shlyakhtina, Tr. n.-i. in-ta zem. mag., Issue 11, 1955 pp 229-236 (from Referativnyy Zhurnal--Geologiya, No 6, Jun 56, Abstract No 6319)

"World magnetic maps were compiled on a scale of 1:50,000,000 (Mercator projection) according to the data of more than 78,000 observation points compiled from 1900 to 1952 for USSR territory and from 1900 to 1947 for territory outside the USSR. In the utilization of data, corrections were intrcduced for centenary measurements of the magnetic field of the earth with the aid of Vestayn world maps of 100-year changes of terrestrial magnetism (izopor) and "izopor" maps compiled in the Institute of Terrestrial Magnetism for the Arctic territory and certain other regions. The accuracy of compiled maps of terrestrial magnetism depends on the extent to which the magnetic field was studied — which is not uniform. Whereas all of Europe, USA, Japan, India, New Zealand, and the Union of South Africa were covered uniformly by a magnetic survey, vast territories of Asia, Africa, South America and in particular of the Antarctic and all of the oceans have only a sparse network of magnetic observations or have not been surveyed at all.

МАЛЬЦЕВА, К.А.

"Magnetic Surveys Outside the USSR," by L. I. Al'tshuler, B. D. Vints, K. A. Mal'tseva, Z. S. Chuguryan, and A. P. Shlyakhtina, Tr. n.-i. in-ta zem. magn., Issue 11, 1955, pp 190-228 (from Referativnyy Zhurnal -- Geologiya, No 6, Jun 56, Abstract No 6320)

"A review is given of the investigations of terrestrial magnetism made on the earth's surface (excluding USSR territory) chiefly during the period 1900-1950. It is stated that, during the last few years, a catalogue of world data on the determination of the components of terrestrial magnetism containing 75,000 cards, each of which corresponds to a single observation, was compiled at the Institute of Terrestrial Magnetism. The existence of such a catalogue affords the possibility of studying the peculiarities of the earth's magnetic field as a whole as well as the changes of the earth's magnetism with time, and, in particular, the possibility of analyzing the geological composition of large tectonic structures of the earth's crust according to magmetometric data. The review of magnetic surveys was compiled according to these divisions: Western Europe, America, Asia, Africa, Australia, and Oceania. Other information given includes the years when the magnetic surveys were conducted, the number and density of the points of observation, the names of the researchers, and the character of the observations in the sense of the accuracy and completeness of the determination of the components of the magnetic field. There is a large bibliography consisting of 690 titles, grouped according to the same geographical divisions into which the text of the survey is divided. These materials served as the basis for the compilation of universal terrestrial magnetism maps published in 1955 by the authors." (U)

Sum No 1962

MAL'TSEVA, I. V., Candidate Med Sci (diss) -- "The clinical apsects and course of experimental diphtheria in X-ray-irradiated guinea pigs". Leningrad, 1959. 20 pp (Leningrad State Order of Lenin Inst for the Advanced Training of Physicians im S. M. Kirov), 200 copies (KL, No 24, 1959, 151)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001031900021-6

RAPOPORT, M.B.; SAMOYLENKO, V.N.; MAL'TSEVA, I.M.

Effect of physicochemical processes taking place in the carbon lining of an electrolytic cell, on the deformation of the cathode casing. Izv. vys. ucheb. zav.; tsvet. met. 5 no.2:81-87 '62.
(MIRA 15:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy alyuminiyevo-magniyevyy institut.
(Aluminum--Electrometallurgy)
(Electrolysis--Equipment and supplies)

MALTSEVA, I.M.

USSR/Cultivated Plants - Technical, Oleaginous, Sugar-Bearing. L-5

Abs Jour : Ref Zhur - Biologiya, No 16, 25 Aug 1957, 69287

Author : Mal'tseva, I.M.
Inst :
Title : Study of the Effectiveness of Thermophosphates for Cotton Plants and Grasses.

Orig Pub : Sots. s. kh. Uzbekistana, 1956, No 7, 72-75

Abstract : In experiments of Union NIKhI on gray soils in 1954-1955, thermophosphates used in cultivating cotton plants and grass mixtures did not yield in their action to superphosphates. In laboratory experiments with soil composts the content of assimilated phosphoric acid was higher in containers with superphosphates than with thermophosphates. The addition to phosphate fertilizers of manure in the proportion of 1:1 increased the quantity of assimilated P in the soil.

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S/136/60/000/02/005/022
E193/E433

Application of Polyacrylamide in Thickening of Scheelite Concentrates

rough concentrate (70 to 80 % of which are treated daily), the value of the increased output would reach 120000 to 250000 roubles per annum; in the case of the final concentrate, the application of 0.3 kg of polyacrilamide per day would increase the value of the yearly output by 180000 to 230000 roubles, giving the total savings of 230000 to 460000 roubles per annum. There are 2 tables and 8 references, 6 of which are Soviet and 2 English.

ASSOCIATIONS: Institut tsvetnykh metallov im M.I.Kalinina
(M.I.Kalinin Institute of Non-ferrous Metals)
Ingichkinskaya obogatitel'naya fabrika
(Ingichkinsky Beneficiation Plant)

Card 9/9

S/136/60/000/02/005/022
B193/B463

Application of Polyacrilamide in Thickening of Scheelite Concentrates

this way, the content of solids in the slime discharge from the thickener was reduced by more than 75%, giving a daily saving of 3.5 to 6 t of valuable material. Some results of the industrial tests are reproduced in Table 2 under the following headings: conditions (no flocculant; no flocculant; flocculant added; flocculant added), shift; content (%) of WO_3 in the ore, tailings, and rough flotation concentrate, recovery (%) of WO_3 in the rough concentrate; WO_3 content (%) in the final concentrate. The effect of the polyacrilamide addition on thickening of the final concentrate was even more beneficial since, in this case, it was possible to add a larger proportion of this reagent; in the absence of the flocculating agent, the clarified liquid, after 6 h settling, contained 60 g/l solids; when polyacrilamide was added (30 l of 0.5% solution per each 1.5 t of the concentrate), the clarified liquid, after 6 h settling, contained practically no suspended solids. It was estimated

Card 8/9 that if 50 g of the flocculant were used per 1 t of the

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E193/E483

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seen that if a low consumption of the flocculant is aimed at, it has to be used in a highly diluted form: thus, for instance, when only 50 g/t of the reagent is used, it should be diluted to 0.006%. Similar results were obtained for settling of the final concentrate in the case of which 35 g/t of the flocculant, diluted to 0.002%, gave satisfactory results although, when further dilution was attempted, no flocculation took place unless more reagent was used. The laboratory investigation was followed by a series of industrial tests in which polyacrilamide was used. The flocculant was fed continuously for 38 h into the 8 m thickener, the specific consumption of the reagent was calculated from the data on the quantity of the treated ore and the quantity of flocculant used during this period. When no flocculant was applied, the slime discharge of the thickener contained 50 to 67 g/l solids; in the presence of the flocculant, the content of solids in the slime discharge was reduced to 12 to 20 g/l, the corresponding consumption of the flocculant being 90 to 30 g/t. In

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E193/E483

Application of Polyacrilamide in Thickening of Scheelite Concentrates

the pulp became absolutely clear after 5 to 6 min settling. For rapid measurement of the transparency of the liquid, a photo-exponometer, of the "Leningrad" type, was used; it had been roughly calibrated by determining the position of the pointer for pure water (fifth division on the scale) and for water containing more than 20 g/l solids (second division on the scale), and the relative transparency of the clarified portion of the pulp in various experiments was described by quoting the reading of the instrument. This method was used in presenting the results of experiments in which the effect of the method of adding 50 g/t of polyacrilamide to the rough concentrate on the settling process, had been studied. These results are reproduced in Table 1 under the following headings: settling time, min; transparency of the clarified portion of the liquid when the flocculant in the form of an 0.5% solution, had been added in six doses; transparency of the clarified liquid when the flocculant, in the form of an 0.006% solution, was added in ten doses. It will be

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S/136/60/000/08/005/023
E193/E383

Application of Polyacrilamide in Thickening of Scheelite Concentrates

portion of the same concentrate to which 30 to 60 g/t of the flocculant (polyacrilamide or separan) had been added, contained only 1 g/l solids after 10 to 15 min settling. To obtain similar results in the case of rough concentrate, 120 g of the flocculant had to be added per 1 t of the solids in the pulp. After addition of polyvinyl alcohol (300 g/t) or KOH (600 g/t), the clarified portion of the pulp after 10 to 15 min settling, contained 5 to 6 g/l solids. The effectiveness of the flocculating agents was found to depend on the manner in which they were introduced. When the flocculant, in the form of an 0.1% solution, was added to the pulp in the cylinder all at once, no flocculation occurred unless 150 g/t of the reagent was added, and even then the clarified portion of the pulp after 2 h settling, contained 15 g/l solids. On the other hand, when the flocculant was introduced in three doses, better clarification was attained at a lower consumption (100 g/t) of the flocculating agent; when 150 g/t of the flocculant was added in this manner, the liquid portion of

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E193/E383

Application of Polyacrilamide in Thickening of Scheelite Concentrates

900 kg of valuable product was lost every day. In the preliminary laboratory experiments, conducted in glass cylinders (220 ml capacity), the following flocculating reagents were tested: alkaline extract from sea-weeds; carboxymethylcellulose, polyvinyl alcohol; polyacrilamide, separan 2610; KODT (a flocculant, obtained at the State Institute of Non-Ferrous Metals by condensation of the vat residues after distillation of hexamethylendiamine with dichloretane and crude tallol oil); PANG (partially hydrolized polyacrilamide); staromal (Czechoslovakian reagent - ammonium salt of a copolymer of styrol and maleic anhydride); sodium polyacrylate. Of these, only polyacrilamide, separan 2610, KODT and polyvinyl alcohol were found to have the desired effect on the rate of settling of the pulp and on the quality of the effluent. The effectiveness of these flocculating agents is illustrated by the following data: after 24 h setting, the clarified portion of the final concentrate contained 55 g/l solids; the clarified

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Application of Polyacrilamide in Thickening of Scheelite Concentrates

flotability after being circulated; for this reason, scheelite present in the slime discharge was not recovered and was lost in the flotation tailings, apart from the fact that the flotation process itself was adversely affected by the introduction of the slime discharge into the feed. The crude scheelite concentrate (ie the sand discharge from the thickener), mixed with sodium silicate (5.5 kg/t) was steamed out at 85 to 90°C and fed into the flotation machine of the beneficiating cycle; the final flotation concentrate, containing 55 to 60% WO_3, constituted a pulp with 30 to 40% solids and was thickened in four pyramidal settling tanks (total area - 12 m^2, total volume - 13 m^3); the slime discharge from these tanks, containing 55 to 65 g/l of solids with 6 to 12% WO_3, was treated again in a cylindrical settling tank in series with several square settling tanks (total area - 12 m^2, total volume - 12 m^3); however, only 10% solids was recovered by this method, so that in each 15 m^3 of the slime discharge, 500 to

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pyroxene-garnet skarns, and up to 15% of gangue minerals (granite and lime-stone). The ore was ground (to contain 55 to 60% of the -0.074 mm fraction) in the presence of sodium carbonate (approximately 4.5 kg/t), pH of the pulp being maintained at 9.7 to 10.0; prior to flotation, the pulp was treated with sodium silicate (1.5 kg/t), after which oleic acid (0.27 kg/t) mixed with equal quantity of kerosene, was added. The roughing flotation yielded concentrate in the form of pulp (23 to 24% solids) containing 2 to 4% WO_3, which was fed into an 8 m thickener; the slime discharge from the thickener (which was discarded) contained 50 to 60 g of solids per litre, the WO_3 content in these solids being 0.6 to 0.8%, ie higher than in the crude ore. To avoid these losses of scheelite, the slime discharge from the thickener was, for some time, returned to the flotation machine; this step, however, failed to produce the desired results, owing to the fact that scheelite can be successfully floated only directly after being conditioned with the flotation reagents and loses its

18.2000

6894

S/136/60/000/02/005/022
E193/E483

AUTHORS: Kuz'kin, S.F., Nebera, V.P. and Mal'tseva, I.I.

TITLE: Application of Polyacrilamide in Thickening of Scheelite Concentrates

PERIODICAL: Tsvetnyye metally, 1960, Nr 2, pp 17-20 (USSR)

ABSTRACT: In continuation of work carried out at the Institute of Non-Ferrous Metals (Ref 4, 6, 7), the authors of the present paper have conducted a series of experiments on improving the efficiency of the thickening operations with the aid of polyacrilamide, which is generally regarded as a very good flocculating agent; (the product used in these experiments had been prepared in a pilot plant at the Leningrad Metallurgical Research Institute by polymerization of the products of hydrolysis of acrylonitryl with sulphuric acid; the colourless, gelatinous mass obtained in this manner contained 8% of active polyacrilamide). The experiments were conducted on beneficiation products obtained at the Ingichkinsky Plant; the ore, treated at this plant at the time of the present investigation, contained 0.3 to 0.6 WO_3 in the form of scheelite, finely dispersed in pyroxenes and

Card 1/9

GANZBURG, G.M.; MAL'TSEVA, G.V.

Determination of cobalt and iron in nickel with ortho-phenanthroline. Zav.lab. 31 no.4:406-408 '65.
(MIRA 18:12)

1. Dnepropetrovskiy gosudarstvennyy universitet.

MAL'TSEVA, G.K.

Intraorganic lymphatic system of the diaphragm in rats. Trudy [illegible] 63:148-157 '61. (MIRA 17:4)

1. Kafedra normal'noy anatomii Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta (zav. kafedroy - prof. V.N.Nadeshkin).

MAL'TSEVA, G.K.; ZOLOTUKHIN, I.V.; POSTNIKOV, V.S.

Effect of temperature on the internal friction of copper alloys. Fiz. met. i metalloved. 16 no.5:754-759 N '63. (MIRA 17:2)

1. Kemerovskiy pedagogicheskiy institut, Voronezhskiy tekhnologicheskiy institut i Voronezhskiy politekhnicheskiy institut.

MAL'TSEVA, G.K.; POSTNIKOV, V.S.

Internal friction of cadmium-magnesium alloys. Izv. vys. ucheb. zav.; chern. met. 6 no.11:153-156 '63. (MIRA 17:3)

1. Voronezhskiy politekhnicheskiy institut.

L 11074-63 EWP(q)/EWT(m)/BDS--AFFTC/ASD--JD/JG

ACCESSION NR: AP3001379 S/0148/63/000/005/0156/0161

AUTHOR: Mal'tseva, G. K.; Postnikov, V. S.; Usanov, V. V.

57
56

TITLE: Internal friction of CuAu and Cu sub 3 Au alloys

SOURCE: IVUZ. Chernaya metallurgiya, no. 5, 1963, 156-161

TOPIC TAGS: internal friction, CuAu alloy, Cu sub 3 Au alloy, reorganization of atoms, bond energy, hetero atoms, activation energy, peak properties

ABSTRACT: The internal friction of CuAu and Cu sub 3 Au alloys was studied during cooling in order to determine its peak properties. It is assumed that temperature change reflects the kinetics of the regulation processes. If an hypothesized tolerance for the interaction between internal friction and process regulation is correct, it is possible to compute from isothermic curvature, the time of relaxation of the system to a thermodynamically stable state. From examination of frequency of fluctuation of the peak, displacing toward the high temperatures and decreasing in size, it is inferred that the processes which cause peaks in internal friction apparently involve a reorganization of atoms during regulation. Thus the bond energy of hetero atoms is somewhat greater than that of the uniform atoms. The experimentally determined value for activation energy reflects this fact. Orig. art.

Card 1/2

Voronezh Polytechnic Inst. and Kamsk Pedagogic Inst.

MAL'TSEVA, G.K.; POSTNIKOV, V.S.

Effect of heat treatment on temperature relation characteristics of internal friction in beryllium bronze. Izv. vys. uchob. zav.; chern. met. 5 no.7:146-150 '62. (MIRA 15:8)

1. Voronezhskiy tekhnologicheskiy institut.
(Beryllium bronze--Heat treatment) (Internal friction)

MAL'TSEVA, G. K.

PHASE I BOOK EXPLOITATION SOV/5305

Moscow. Institut stali

Relaksatsionnyye yavleniya v metallakh i splavakh; trudy Mezhvuzovskogo soveshchaniya (Relaxation Phenomena in Metals and Alloys; Transactions of the Inter-Institute Conference) Moscow, Metallurgizdat, 1960. 326 p.

Sponsoring Agency: Ministerstvo vysshego i srednego spetsial'nogo obrazovaniya RSFSR and Moskovskiy institut stali imeni I.V. Stalina.

Ed. (Title page): B.N. Finkel'shteyn; Ed. of Publishing House: Ye.I. Levit; Tech. Ed.: A.I. Karasev.

PURPOSE: This collection of articles is intended for personnel in scientific institutions and schools of higher education and for physical metallurgists and physicists specializing in metals. It may also be useful to students of these fields.

COVERAGE: The collection contains results of experimental and theoretical investigations carried out by schools of higher education and scientific research institutions in the field of the relaxation phenomena in metals and alloys. Several articles are devoted to the investigation—by the internal-friction method—of the decomposition of supersaturated solid solutions. Also analyzed are the defects of the crystalline lattice, plastic deformations, high-temperature behavior of alloys, and creep. Problems of the relation between internal friction and temper brittleness, the use of the method of internal friction in the investigation of powder-metallurgy products, and the mechanism of impact fatigue are discussed. The collection also contains articles on the damping characteristics of materials, elastic after-effect, and the new slow-detection method. No personalities are mentioned. References follow most articles. There are 366 references: 192 Soviet and 174 non-Soviet.

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MALTSEVA G K

MALTSEVA, G. K., and POSTNIKOV, V. S.

"The Decomposition of Supersaturated Solid Solutions."

report presented at the Inter-vuz Conference on Relaxation Phenomena in Pure Metals and Alloys, 2-4 Apr 1958, at Moscow Inst. of Steel.

Vest. Vys Shkoly, 9, 72-73, 1958.

MAL'TSEVA, G.K.

Thyroid treatment for hypothyreosis in school children. Pediatriia no.3:90 My-Je '54. (MLRA 8:1)

1. Iz kafedry topograficheskoy anatomii i operativnoy khirurgii Ivanovskogo meditsinskogo instituta.
(THYROID GLAND--DISEASES)

FEDOROV, A.A., veterin. vrach; MAL'TSEVA, G.A., veterin. vrach

Practices in the preparation and use of PMS. Veterinariia 41 no.2.82-83 F '64. (MIRA 17:12)

1. Ussuriyskoye proizvodstvennoye upravleniye, Primorskiy kray.

length 40 mm, was placed 10 mm below and burned for 2 min. Dependent on the behavior after removal of the flame, the following material classification is suggested: inflammable, if burning continues and weight loss is more than 20%; slow-burning, if burning or glowing continues for not more than 30 sec with less than 20% loss in weight; conditionally flame resistant and self-extinguishing if the flame dies at once and the weight loss is less than 8%; noninflammable, if it does not catch alight in two tests. Inflammability of sheets and films was determined on an apparatus similar to that recommended by British Standard no. 476. A 40 mm alcohol flame was applied for 30 sec. The length of the piece burned and burning time after removal of the flame were determined. There are 2 figures and 1 Soviet reference.

ASSOCIATION: Moskovskiy institut khimicheskogo mashinostroyeniya (Moscow Institute of Chemical Machinery)

S/032/62/028/004/011/026
B101/B138

AUTHORS: Royzen, I. S., Gutarev, V. V., and Mal'tseva, A. S.

TITLE: Determination of inflammability of plastics

PERIODICAL: Zavodskaya laboratoriya, v. 28, no. 4, 1962, 467-468

TEXT: No standard method of determining inflammability has been promulgated in the USSR. The Tsentral'nyy nauchno-issledovatel'skiy institut pozharnoy okhrany (Central Scientific Research Institute of Fire Protection) recommends the fire tube and calorimetric methods, or measurement of the rate of flame propagation. The inflammability of rigid and free-flowing plastics was tested by the fire tube method. The apparatus consisted of a 2 mm-thick quartz or molybdenum glass tube heated by a nichrome coil attached to it 50 mm from the bottom end. The temperature of the outer wall was measured at height h = 2/3 l. The temperature was kept 20 - 30°C below the melting point of the plastic. A piece of the plastic of precise weight was suspended inside the tube (free-flowing material was held in a copper mesh basket) so that 5 mm of it projected beyond the tube. An alcohol burner, flame

Card 1/2

used for producing non-inflammable, self-extinguishing plastics. There are 7 figures and 3 tables.

Fig. 6. Diagram of an apparatus for determining the degree of inflammability of solid and powder plastics.
Legend: (1) tube; (2) heater; (3) thermocouple.

Fig. 7. Diagram of an apparatus for determining the inflammability of films.
Legend: (1) hemispherical frame; (2) needles.

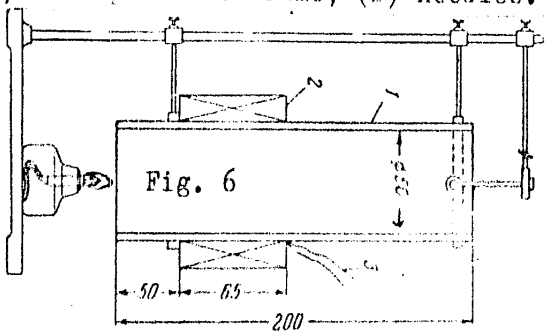


Fig. 6

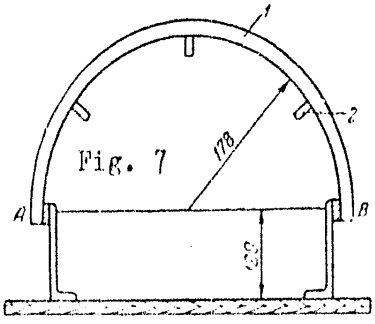


Fig. 7

Card 4/4

established: (a) inflammable with > 20% loss in weight; (b) poorly inflammable with < 20% loss in weight and < 30 sec afterglow; (c) "conditionally non-inflammable and self-extinguishing" with < 8% loss in weight, extinguishing at once; (d) non-inflammable, not burning on double ignition. The mean loss in weight in the fire tube for viniplast is ~ 7.7%, in the heated fire tube 6%, for glass plastics ~ 2.5% and 5.5%. When inflaming 150·112·3 mm samples of pine, viniplast and glass plastics impregnated with gasoline for 3 hr, viniplast and glass plastics did not burn. As a modification of the British standard 476, a 40·550 sample (< 1 mm thick) is heated on needles placed on a hemispherical frame (1, Fig. 7). Ignition is caused by an alcohol burner with 40-mm high flame. In this case, the following classes are established: (a) poorly inflammable at 30 sec afterglow and 50 mm length of the burnt section; (b) conditionally non-inflammable, self-extinguishing, with extinction occurring immediately after removing the flame; (c) non-inflammable, after double ignition. Advantages of the method: (1) Burning conditions variable with time; (2) estimation of burning rate according to the length of the burnt section; and (3) simple handling. Since most of the plastics are inflammable, halogen derivatives of hydrocarbons must be

q_s = amount of heat supplied from the heat source. At K = 0, the material is not inflammable, at K > 0.5 poorly inflammable, at K < 2.1 inflammable. Besides, a poorly inflammable class was suggested between K = 0.5 - 2.1. Comparison between Western and Soviet methods showed that the loss in weight is the most convenient index of inflammability of > 1 mm thick solid plastics. At < 1 mm thick films, the length of the burnt section and the rate of burning can be most reliably determined. Therefore, the authors suggest to determine the inflammability (A) of 1 - 10 mm thick solid and powder plastics, and (B) of flexible < 1 mm thick films. In this case, the investigation conditions of the fire tube of the TsNIIPO were established by using an alcohol burner with an alcohol of definite quality and concentration. A 200-v nichrome heating coil is wound on a tube made of quartz or molybdenum glass (Fig. 6) 50 mm above the lower edge. Six samples (35·150, thickness 1 - 10 mm) weighed with an accuracy of 0.5 g, are suspended in exactly vertical position. The sample ends project below by 5 mm, and they are inflamed 10 mm above the burner within 2 min by a 40 mm high flame. The surface temperature is kept at 20 - 30°C below the melting temperature of the sample. Loose material is filled into a small Cu wire basket. The following classes of plastics are

S/191/61/000/012/006/007
B110/B147

AUTHORS: Royzen, I. S., Gutarev, V. V., Mal'tseva, A. S.

TITLE: Examination of burning characteristics of plastics

PERIODICAL: Plasticheskiye massy, no. 12, 1961, 32 - 36

TEXT: Between the classes of inflammable and poorly inflammable plastics established according to standards Н-102-54 (N-102-54), "conditionally non-inflammable, self-extinguishing" plastics should be ranged as an intermediate stage. The Tsentral'nyy nauchno-issledovatel'skiy institut pozharnoy okhrany (Central Scientific Research Institute of Fire Protection) has recommended the following methods: (a) method with "fire tube"; (b) calorimetric method; and (c) method of the velocity of flame propagation. The TsNIIPO recommends determining loss in weight and capability of glowing and burning in open flame by (a). At > 20% loss in weight, the plastics are inflammable; at a loss in weight < 20% and self-extinction, (b) is applied. In this case, it holds: $K = q_{hr}/q_s$, where q_{hr} = amount of heat released in combustion of the sample;

Card 1/4

ZAKHAROV, B.A.; IVANOV, V.I.; MAL'TSEVA, A.L.; KRYLOVA, G.A.

Controlling the specificity of cellulose homogeneity by means of temperature in the course of treatment with dilute nitric acid. Izv. AN SSSR.Otd.khim.nauk no.5:926-927 My '61. (MIRA 14:5)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
(Cellulose)

BYKOV, R.I.; MAL'TSEVA, A.K.; TURANOV, V.A.

Prospects for finding oil and gas in Jurassic sediments of western Uzbekistan and adjacent regions. So.geol. 5 no.5:69-81 My '62. (MIRA 15:7)

1. Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti imeni I.M. Gubkina.
(Uzbekistan--Petroleum geology)
(Uzbekistan--Gas, Natural--Geology)
(Turkmenistan--Petroleum geology)(Turkmenistan--Gas, Natural--Geology)

BYKOV, R.I.; MAL'TSEVA, A.K.; TURANOV, V.A.; GAVRILOV, V.P.

Regularities in the distribution of oil and gas fields in the Jurassic sediments of the central part of the Turan Plateau. Trudy MINKHiGP no.43:125-134 '63. (MIRA 17:4)

MAL'TSEVA, A.K.

Lithofacies characteristics, reservoir rocks, and bitumen content of Paleogene sediments in central and eastern Ciscaucasia. Trudy MINKHiGP no.27:29-42 '60. (MIRA 13:9)
(Caucasus, Northern--Petroleum geology)
(Caucasus, Northern--Gas, Natural--Geology)

POGREBSHCHIKOVA, T.A., Assistent; MAL'TSEVA, A.K.

Necrobacillosis im man. Vest.ven. i derm.no.3:44-46 My-Je '55.
(MLRA 8:10)

1. Iz kliniki kozhnykh i venericheskikh bolezney (zav.-prof. G.G. Kondrat'yev) Krymskogo meditsinskogo instituta imeni I.V.Stalina.

(INFECTION
necrobacillosis, diag. & ther.)

MAL'TSEVA, A.

Mixed crews at the construction of the Dneprodzerzhinsk Hydroelectric Power Station. Avt. transp. 43 no.4:9-10 Ap '65.
(MIRA 18:5)

L 5/535-65

ACCESSION NR: AR5013640

working formulas have the form: $u' = -0{,}062 \frac{\Delta v}{\sin \varphi}$, $v' = 0{,}062 \frac{\Delta u}{\sin \varphi}$,

where u', v' are the apeostrophic wind components in m/sec, and Δ u, Δ v are the wind velocity changes in km/hour. Analysis of the computations shows that positive and negative divergences of the geostrophic wind from the true wind is equally probable. The mean values of such divergence, taking into account the sign for negative values of $\bar{u}'$ and $\bar{v}'$, were $\bar{u}'$ = 10,3 m/sec, $\bar{v}'$ = 6,9 m/sec; in the case of positive values — u' = 9 m/sec and v' = 7,8 m/sec, respectively. The mean square divergence was $\sigma_{u'}$ = 8,1 m/sec, $\sigma_{v'}$ = 8,7 m/sec. In all the analyzed cases the mean relative apeostrophic divergence decreased with an increase in wind velocity. It is shown that the wind distribution conforms to the normal law of distribution of random values. This makes possible a theoretical estimation of the probability of different values and gradations of apeostrophic wind divergence on the basis of the Gauss formula and the Laplace function. V. Bayev.

SUB CODE: ES ENCL: 00

Card 2/2

[illegible] [illegible] GW

ACCESSION NR: [illegible] [illegible]

[illegible]

13

B

SOURCE: Ref. zh. Geofizika, Abs. 5B[illegible]

AUTHOR: Solonin, S.V.; Mal'tseva, A.A.; Rushilo, V.S.

TITLE: Investigation of ageostrophic wind divergence on the basis of experimental data

CITED SOURCE: Tr. Leningr. gidrometeorol. in-ta, vyp. 19, 1964, 101-111

TOPIC TAGS: wind divergence, ageostrophic wind divergence, geostrophic wind, weather balloon

TRANSLATION: This paper presents the results of an estimation of ageostrophic wind divergence obtained from data collected on balloon flights. These data were used to compute accelerations and then the formulas

$$u' = -\frac{1}{l}\frac{dv_p}{dt}, \quad v' = \frac{1}{l}\frac{du_p}{dt},$$

(where $l = 2\omega \sin \varphi$ is Coriolis force, u_p, v_p are the components of wind velocity at the isobaric surface) were used to determine the values of the ageostrophic components. The study was based on data from regular launchings of constant-level balloons at the 300- and 250-mb levels. A total of 83 flights with an average duration of 12 hours were analyzed. The time interval used in the computations was 6 hours. In this case the

Card 1/2

1. Zaveduyushchaya terapevticheskim otdeleniyem Khoynikskoy rayonnoy bol'nitsy (for Mal'tseva). 2. Gomel'skiy oblastnoy protivozobnyy dispanser (for Glusker).
(DIABETES)

MAL'TSEVA, A., inzh.

Work of an integrated brigade in construction of a spillway dam. Prom.stroi.i inzh.soor. 4 no.1:51-52 Ja-F '62. (MIRA 15:8)
(Dneprodzerzhinsk Hydroelectric Power Station--Dams)
(Concrete construction)

L 04795-67

ACC NR: AP6024482

27, M.-L. 1963). Plots of the temperature dependence of the thermoelectric power and of the effective masses, as well as the absorption and reflection spectra, are presented. The values obtained for the effective masses of the state density m_e(0.38 -- 0.48) and of the conductivity m_c(0.13 -- 0.32) agree with the modal of four equivalent minima in the conduction band, with $m_{cn} = m_{cp}$. The agreement is poor for the valence band. Orig. art. has: 5 figures, 4 formulas, and 2 tables

SUB CODE: 20/ SUBM DATE: 23Dec65/ ORIG REF: 009/ OTH REF: 015

Card 2/2 afs

L 04795-67 EWI(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AP6024482 SOURCE CODE: UR/0181/66/008/007/2154/2162

AUTHOR: Mal'tsev, Yu. V.; Nensberg, Ye. D.; Petrov, A. V.; Semiletov, S. A.; Ukhanov, Yu. I.

ORG: Institute of Semiconductors AN SSSR Leningrad (Institut poluprovodnikov AN SSSR Leningrad)

TITLE: Electric and optical investigations of PbS

SOURCE: Fizika tverdogo tela, v. 8, no. 7, 1966, 2154-2162

TOPIC TAGS: lead compound, sulfide, conduction band, valence band, Hall constant, thermoelectric power, electric conductivity, Faraday effect, temperature dependence

ABSTRACT: The PbS samples investigated had carrier densities from 10^{18} to 10^{20} cm^{-3} for n-type and 1.4×10^{18} to 4×10^{19} cm^{-3} for p-type, which are higher than those used in earlier investigations. Measurements were made of the Hall coefficient, the thermoelectric power, the electric conductivity, the Faraday effect, and the absorption and reflection spectra in a temperature range from 80 to 900K and in a magnetic field of 6 kOe. The crystals were grown by slowly cooling from the melt. Doping was with chlorine (n-type) or silver (p-type). Tests were also made on epitaxial films with thickness from 2 to 16 microns. The apparatus for the Hall measurements was described earlier (in: Termoelektricheskiye svoystva poluprovodnikov, Izd. AN SSSR,

Card 1/2

L 29958-66

ACC NR: AP6012481

exhibited a slow decrease with increasing wavelength, a sharp minimum in the range between 10 and 17 μ (depending on the electron density), and a steep increase. The value obtained for the lattice dielectric constant is 16.0 ± 0.1, which is in good agreement with published data. The effective mass of the electrons was found to be 0.071, 0.053, and 0.038 times the free electron mass (m_0) at electron concentrations 12, 6, and 2.6 x 10^{18} cm^{-3} when calculated from the plasma reflection and 0.018, 0.021, 0.027, 0.038, and 0.054 m_0 for electron densities 2.5, 4, 7.5, 260, and 600 x 10^{16} cm^{-3} by using the Faraday effect. The experimental dependence of the energy on the wave number agreed with Kane's calculations up to electron densities 1.2 x 10^{19} cm^{-3}. Some deviations from Kane's theory are observed at densities greater than 5 x 10^{18} cm^{-3}, and call for a special analysis. Orig. art. has: 5 figures and 6 formulas.

SUB CODE: 20/ SUBM DATE: 13Sep65/ ORIG REF: 003/ OTH REF: 011

Card 2/2

L 29958-66

ACC NR: AP6012481 SOURCE CODE: UR/0181/66/008/004/1176/1181

AUTHORS: Kesamanly, F. P.; Mal'tsev, Yu. V.; Nasledov, D. N.; Ukhanov, Yu. I.; Filipchenko, A. S.

ORG: Physicotechnical Institute im. A. F. Ioffe, AN SSSR, Leningrad (Fiziko-tekhnicheskiy institut AN SSSR)

TITLE: Magnetooptical investigations of the conduction band of InSb

SOURCE: Fizika tverdogo tela, v. 8, no. 4, 1966, 1176-1181

TOPIC TAGS: indium compound, antimonide, magnetooptic effect, conduction band, Faraday effect, light reflection, dielectric constant

ABSTRACT: The authors investigated the optical reflection, transparency, and location of the plane of polarization (Faraday effect) in the wavelength interval from 2 to 25 μ at temperatures from 130 to 550K and electron densities from intrinsic to 1.2×10^{19} cm^{-3}, with an aim at checking the validity of the theory proposed by E. O. Kane (Phys. Chem. Sol. v. 1, 249, 1957). The apparatus used for the measurements was described by the authors earlier (Izv. AN SSSR ser. fiz. v. 28, 989, 1964 and earlier papers). InSb single crystals doped with Se were drawn from the melt by the Czochralski method. The reflection coefficient

Card 1/2

L 19621-65

ACCESSION NR: AP4041360

because of the direct influence of temperature on the dispersion law in the conduction band. In conclusion, we express our gratitude to D.N.Nasledov, V.V.Galavanov, O.V.Yemel'yanenko, N.V.Zolotova and F.P.Kesamanly* for making available the specimens and for valuable discussions." Orig.art.has: 3 formulas, 1 figure and 1 table.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00

SUB CODE: SS,EM NR REF SOV: 006 OTHER: 012

Card 3/3

0

of the interaction between the conduction band and the valence band for k = 0, Δ is the spin-orbit splitting energy, and h = 2πħ is Planck's constant. The present work was undertaken to check the validity of the above law and obtain data on the temperature dependence of the effective electron mass in InSb, InAs, InP and GaAs single crystals in the range from 117 to 600°K. The effective mass was determined from the angle of rotation of the plane of polarization of infrared rays in the specimen mounted in a magnetic field so that the induction vector B was parallel to the Poynting vector (i.e., by means of the Faraday effect). The crystals were chosen so as to insure minimum variation of the electron concentration with temperature (the temperature dependence of the concentration was checked by means of the Hall effect; also checked was the temperature dependence of the electron mobility). Estimates of the measurement errors indicate that the maximum error did not exceed 50% and that the average error was about 20%. The results are presented in the form of a table and in a figure (curves of Δm_n versus T). The $m_n = f(T)$ data obtained for the investigated compounds appear to be in good quantitative agreement with the corresponding data for Ge and Si, despite the fact that the conduction bands of Ge and Si are known to be somewhat pinbolic, whereas they are not in the investigated compounds. This gives reason to infer that the effective electron mass changes with heating not only owing to change of the electron distribution in the conduction band but also

L 19631-65 SSD/RAEM(a)/ASD(a)-5/AFWL/ESD(gs)/ESD(t)
ACCESSION NR: AP4041360 S/0048/64/028/006/0989/0992

AUTHOR: Ukhanov, Yu. I.; Mal'tsev, Yu. V.

TITLE: Temperature dependence of the effective mass of electrons in $A^{III}B^{V}$ type semiconductor compounds /Report, Third All-Union Conference on Semiconductor Compounds held in Kishinev, 6-21 Sep 1963/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v.28, no.6, 1964, 989-992

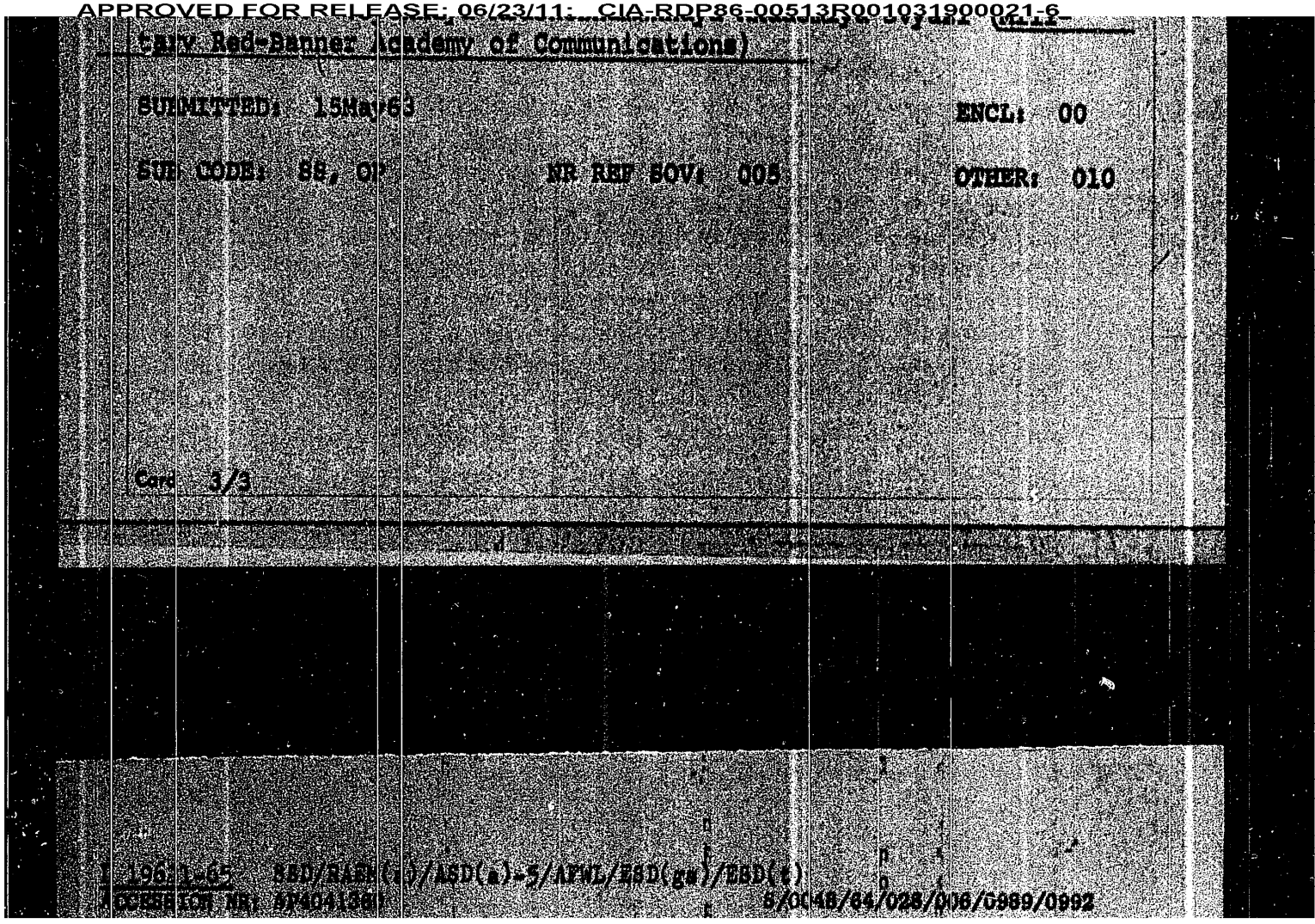
TOPIC TAGS: semiconductor, semiconductor carrier, current carrier, temperature dependence, indium arsenide, indium antimonide, indium phosphide, gallium arsenide

ABSTRACT: The temperature dependence of the effective mass of electrons (and holes) in different semiconductors has been studied by many investigators. H.Ehrenreich (J.Appl.Phys.Suppl.32,2155,1961) established the following law for the variation of the effective electron mass m_n^0:

$$\frac{m}{m_n^0} = 1 + \frac{2mp^2}{3\hbar^2}\left(\frac{2}{E_g} + \frac{1}{E_g + \Delta}\right),$$

where m is the free electron mass, p is the temperature-independent matrix element

Card 1/3



Tairy Red-Banner Academy of Communications)

SUBMITTED: 15May63 ENCL: 00

SUB CODE: SS, OI NR REF SOV: 005 OTHER: 010

Card 3/3

1961-65 SSD/RAEM(t)/ASD(a)-5/APWL/ESD(gs)/ESD(t)

ACCESSION NR: AP4041361 S/0048/64/028/006/0989/0992

galvano-magnetic and the other for magneto-optical measurements. The results show that heating the samples reduces the angle of rotation of the plane of polarization in the long-wave region (5--8 μ), but no noticeable changes occur in the edge regions. The Faraday effect due to the minority carriers was investigated by using germanium infrared diode-modulators placed in a magnetic field in such a way that the p-n junction was parallel to the field and to the infrared flux. The carriers were injected through the p-n junction by current pulses of density 30 mA/mm^2, the minority-carrier density being of the order of 10^{15} cm^{-3}. On rising from 117 to 580K, the

Card 2/3

L 13085-65
ACCESSION NR: AP4047363

effective mass increased by 15% and the refractive index increased by 4.6%. Orig. art. has: 3 figures, 1 formula, and 1 table.

ASSOCIATION: Voyennaya Krasnoznamennaya Akademiya Svyazi (Military Red-Banner Academy of Communications)

L 13085-65 EWT(1) IJP(c)/ASD(a)-5/APWL/AS(mp)-2/BSD/APMD(t)/ESD(c)/ESD(gs)

ACCESSION NR: AP4047363 S/0139/64/000/005/0150/0155

AUTHORS: Ukhanov, Yu. I.; Mal'tsev, Yu. V. B

TITLE: Investigation of the Faraday effect in n-Ge at temperatures from 117 to 580K

SOURCE: IVUZ. Fizika, no. 5, 1964, 150-155

TOPIC TAGS: Faraday effect, germanium, ir polarization, magneto-optical effect, galvanomagnetic effect, pn junction, carrier density

ABSTRACT: In order to determine the temperature dependence of the effective mass of the electrons in n-Ge having different antimony-atom concentrations, the authors measured the rotation of the plane of polarization of infrared rays with wavelengths from 1.55 to 8 microns in single-crystal samples, in which the antimony-atom concentration ranged from 3.8×10^{17} to 8.3×10^{18} cm^{-3}. The sample thicknesses ranged from 30 to 500 μ and the temperatures ranged from

Card 1/3

KESAMANLY, F.P.; KLOTYN'SH, E.E.; MAL'TSEV, Yu.V.; NASLEDOV, D.N.; UKHANOV, Yu.I.

Nernst-Ettingshausen and Faraday effects in indium phosphide. Fiz. tver. tela 6 no.1:134-140 Ja '64. (MIRA 17:2)

1. Fiziko-tekhnicheskiy institut imeni A.F.Ioffe AN SSSR, Leningrad i Fizicheskiy institut AN AzSSR, Baku.

L 13725-63
ACCESSION NR: AP3001270

furnishing single crystals of n-InAs and for useful discussions." Orig. art. has: 2 figures and 3 formulas.

ASSOCIATION: Voyennaya krasnoznamennaya akademiya svyazi, Leningrad (Military "Red-Banner" Academy of Communications)

SUBMITTED: 30Dec62 DATE ACQ: 01Jul63 ENCL: 00

SUB CODE: 00 NO REF SOV: 003 OTHER: 008

Card 2/2

L 13725-63 EWG(k)/EDS/EWT(1)/EEC(b)-2 AFFTC/ASD/ESD-3 Pz-4
IJP(C)/AT
ACCESSION NR: AP3001270 S/0181/63/005/006/1548/1551 66 65

AUTHOR: Ukhanov, Yu. I.; Mal'tsev, Yu. V.

TITLE: Investigation of the temperature dependence of effective electron mass in n-InAs in the range 293-603K

SOURCE: Fizika tverdogo tela, v. 5, no. 6, 1963, 1548-1551

TOPIC TAGS: polarization plane, In, As, infrared light, effective mass

ABSTRACT: The study involved concentrations of 2.9 x 10 sup 17 per cc (at 293K) in the indicated temperature interval and was made by observing the rotation angle of the polarization plane of infrared light having wave lengths varying from 10 to 18 microns. The methods employed were those proposed previously (Yu. I. Ukhanov and Yu V. Mal'tsev, FTT, 4, 3215, 1962; and Yu. I. Ukhanov, FTT, 4, 2741, 1962). The authors have found that on heating samples from room temperature to 393K, the effective mass increases 7.0 + or - 0.6%. On further rise in temperature the effective mass diminishes almost linearly. At 603K it is 10 + or -1% less than at 393K. "The authors thank D. N. Nasledov and N. V. Zotova for

Card 1/2

Investigation of the temperature dependence of the effective mass of electrons in $A^{III}B^{V}$ compounds by the Faraday effect method. Yu. I. Ukhanov, Yu. V. Mal'tsev. (Presented by Yu. I. Ukhanov--15 minutes).

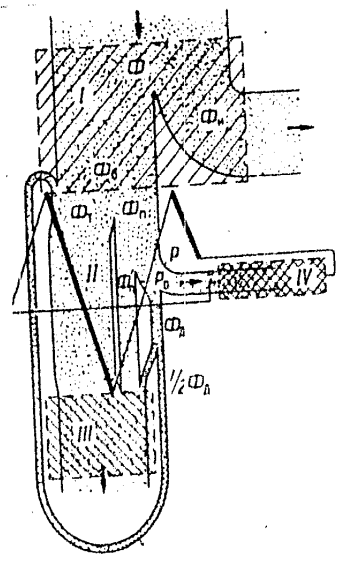
Report presented at the 3rd National Conference on Semiconductor Compounds, Kishinev, 16-21 Sept 1963

Maximum efficiency of a...

SUBMITTED: July 1, 1961

Legend to Fig. 1: Flows of heat in %: Φ = 100 - heat source, $\Phi_н$ = 47 - dissipated by the heater, $\Phi_б$ = 55 - into thermopile, $\Phi_т$ = 40 - entering thermopile through heat conduction, Φ_π = 1 - absorbed in hot junctions (Peltier effect), Φ_π' = 6 - absorbed in cold junctions (Peltier effect), $\Phi_д$ = 4 - separated in thermopile (Joule effect). P_o - overall, P - useful electric power. I - heater, II - thermopile, III - condenser, IV - external resistance.

Fig. 1



Card 2/2

34947

26.2132

S/170/62/005/003/011/012
B108/B104

AUTHOR: Mal'tsev, Yu. V.

TITLE: Maximum efficiency of a thermoelectric generator

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 5, no. 3, 1962, 115 - 117

TEXT: Theoretical considerations are made as to the highest efficiency of a thermoelectric generator. A diagram of an optimum arrangement is shown in Fig. 1 for the case where the maximum excess temperature of the heat source is 900°K, the characteristic excess temperature of the thermopile materials 800°K, and the ambient (heat sink) temperature 300°K. It is stated that efficiency cannot be increased by increasing the load resistance. V. B. Veynberg, Doctor of Technical Sciences, is thanked for advice. There are 2 figures and 5 references: 2 Soviet and 3 non-Soviet. The two references to English-language publications read as follows: Telkes M. J. Appl. Phys., 25, 765 and 1058, 1954.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii imeni D. I. Mendeleyeva, g. Leningrad (All-Union Scientific Research Institute of Metrology imeni D. I. Mendeleyev, Leningrad)

Card 1/2

UKHANOV, Yu.I.; MAL'TSEV, Yu.V.

Faraday effect in indium antimonide at temperatures between 290° and 500°K. Fiz. tver. tela 4 no.11:3215-3219 N '62. (MIRA 15:12)

1. Voyennaya Krasnoznamennaya akademiya svyazi, Leningrad.

(Faraday effect)
(Indium antimonide)

S/051/60/008/005/014/027
E201/E491

A Comparison of the Functions Representing Scattering of Light by Spherical Particles

all given by $k = 1$. When generalized parameters are used to calculate α the errors do not exceed 7% for particles with an absorption index $x = 0$ to 0.5 and a refractive index $n = 0.8$ to 1.5 (when the parameter δ is used), or $n = 1.14$ to 1.50 (when the parameters L and k are employed); this is illustrated in Tables 1 to 3. There are 2 figures, 3 tables and 9 references: 3 Soviet and 6 English.

SUBMITTED: March 16, 1959

Card 3/3

S/051/60/008/005/014/027
E201/E491

A Comparison of the Functions Representing Scattering of Light by Spherical Particles

Boll et al. (Ref.2) employs a different generalized parameter

$$L = \frac{n^2 - 1}{n^2 + 2} \alpha \qquad (2)$$

The present author suggests (Ref.3) a third generalized parameter given by

$$k = \frac{n^2 - 1}{4} (\alpha - 1) \qquad (3)$$

/B

When the parameter k is used, it is not necessary to know anything about the scattering functions in calculations of the positions of their extrema. Scattering functions plotted as dependences on the parameter k are very convenient for comparisons (Fig.1 and 2) because the extrema lie opposite integral values of k and the separations between neighbouring extrema are

S/051/60/008/005/014/027
E201/E491

AUTHOR: Mal'tsev, Yu.V.

TITLE: A Comparison of the Functions Representing Scattering of Light by Spherical Particles

PERIODICAL: Optika i spektroskopiya, 1960, Vol.8, No.5, pp.686-691

TEXT: The author discusses the accuracy and the limits of applicability of various generalized parameters used for graphical representation of scattering functions in such a way that the positions of the corresponding extrema of different functions coincide. Usually the scattering functions are given in tables or curves as dependences on a parameter α for each type of particles characterized by a relative refractive index n. The positions of the principal maxima of the scattering functions and their separations depend on n. This makes it difficult to use the scattering functions for particles with various refractive indices, especially as several tens of scattering functions are known and used. To make comparisons of scattering functions more convenient, generalized parameters depending on α and n are employed. For example, Shifrin (Ref.1) uses

$$\delta = (n-1)\alpha \qquad (1)$$

Card 1/3

On the Position of Extrema in the Functions Describing Scattering of Light by Spherical Particles

The maxima are obtained from Eq (1) by substituting odd values for k and the minima correspond to even values of k. The author shows that the formula of Eq (1) yields reliable results, in good agreement with published work, both for transparent particles (Fig 1) and absorbing particles (Fig 2). In the latter case, however, Eq (1) is valid only for small values of x, but it can be used to calculate the position of the first principal maximum at all values of x. There are 2 figures, 1 table and 5 references, 4 of which are English and 1 French.

SUBMITTED: December 30, 1958.

Card 2/2

SOV/51-7-1-22/27

24(4)
AUTHOR: Mal'tsev, Yu.V.

TITLE: On the Position of Extrema in the Functions Describing Scattering of Light by Spherical Particles (O polozhenii ekstremumov funktsiy rasseyaniya sveta sfericheskimi chastitsami)

PERIODICAL: Optika i spektroskopiya, 1959, Vol 7, Nr 1, pp 124-126 (USSR)

ABSTRACT: Ratio of the light (energy) flux scattered by a spherical particle in all directions to the flux incident on the area equal to the cross-section of this particle is given by a function $K(\alpha, m)$ where $\alpha = 2\pi r/\lambda$, r is the particle radius, λ is the wavelength of radiation in the medium surrounding the particle, $m = n(1 - ix)$ is the complex refractive index, n is the real refractive index of the particle with respect to the surrounding medium and x is the absorption index of the particle. The scattering function $K(\alpha, m)$ has principal maxima and minima on which secondary maxima and minima are superimposed. To find the positions of the principal extrema the following empirical formula is suggested by the author:

$$\alpha_k = 1 + 4k/(mm^* - 1) \qquad (1)$$

where k is a positive integer and m^* is the complex conjugate of m.

Card 1/2

Calorimetric Method of Measuring the Water Absorption Coefficient

less than 10%. Ways for improving the sensitivity of this method have been suggested. V. B. Veynberg supervised the work. There are 4 figures, 1 table, and 3 references, 3 of which are Soviet.

ASSOCIATION: Opticheskiy institut im. S. I. Vavilova, Leningrad (Optical Institute imeni S. I. Vavilov, Leningrad)

AUTHOR: Mal'tsev, Yu. V.

SOV/57-28-9-32/33

TITLE: Calorimetric Metho of Measuring the Water Absorption Coefficient (Kalorimetricheskiy metod izmereniya pokazatelya pogloshcheniya vody)

PERIODICAL: Zhurnal tekhnicheskoy fiziki, 1958, Vol 28, Nr 9, pp. 2084-2091 (USSR)

ABSTRACT: In this paper a calorimetric method of measuring the absorption coefficient of natural water is proposed. This method is basically a measurement of the heat separated in radiation absorption. Only a water sample of a few dozens of millimeters is required for the determinations. A similar method was for the first time applied by Alentsev (Ref 1) for the determination of the luminescence yield in highly absorbing solutions. The experimental set-up and the measuring methods are described. The possibility of applying a calorimetric method to the determination of the absorption coefficient in air is substantiated. This method incorporates the use of the amplitude method, which permits reducing the error by adjusting the zero reading of the instrument. The model of the calorimetric apparatus now in use permits to determine the absorption coefficient of water greater than 0.5 m^{-1} in separate spectral ranges with a relative error

Card 1/2

VEYNBERG, V.B.; MAL'TSEV, Yu.V.

Mirror-lens condensers of large aperture. Opt.-mekh.prom. 25 no.6:19 Je '58. (MIRA 11:10)
(Optical instruments)

BOGATYREVA, V.V.; VEYNBERG, V.B.; MAL'TSEV, Yu.V.; MEYNGARD, P.N.

Doublet focal mirror-lens monochromators. Opt.-mekh.prom. 25 no.5:16 My '58. (MIRA 11:9)

(Monochromators)

or paraboloidal mirror-lens condensers (Figure 2) can be used. The toroidal condenser (Figure 2a) is practically free of aberrations for the angles used in the monochromator. Properties of various monochromators may be compared by means of two characteristics: the coefficient of transmission of monochromatic diffuse light and the relative mean width of the transmission band. The author describes a method for comparison of monochromators using these two characteristics. The described double-focus mirror-and-lens monochromator is found to be intermediate in its properties between prism monochromators and glass light-filters. The work described here on the monochromator mirror-lens condensers was carried out together with V.B. Veynberg, who directed this work. There are 4 figures and 4 Soviet references.

ASSOCIATION: Gosudarstvennyy opticheskiy institut im.S.I. Vavilova (State Optical Institute imeni S.I. Vavilov)
SUBMITTED: June 13, 1957

Card 2/2 1. Spectrum analyzers--Design

AUTHOR: Mal'tsev, Yu. V.

TITLE: Double-focus Lens-and-mirror Monochromator (Dvoynoy fokal'nyy zerkal'no-linzovyy monokhromator)

PERIODICAL: Optika i Spektroskopiya, 1958, Vol IV, Nr 4, pp 506-512 (USSR).

ABSTRACT: A double-focus mirror-and-lens monochromator differs from the usual double-focus monochromators by the presence of a cylindrical reflecting surface which replaces a central diaphragm. This reflecting surface reduces astigmatism of the oblique rays. The monochromator discussed in this paper is shown in Figure 1. It consists of two identical pairs of plano-convex spherical lenses 1, 2, 3 and 4, which are symmetrically placed relative to the monochromator centre. Between these pairs of lenses, a cylinder with an external (curved) mirror surface 5 is placed. The cylinder axis coincides with the optical axis of the system. A circular diaphragm 6, together with the cylinder 5, form a ring slit. The middle convex portions of lenses are cut away and only the outermost regions of the lenses are in use. The lenses were prepared from glass TF-5, suitable for the visible portion of the spectrum. To illuminate the entrance diaphragm 7 and to transmit the beam leaving the monochromator through the exit diaphragm 8, toroidal

Mal'tsev, Yu. V.

USSR/Statistical Physics - Thermodynamics. D-3

Abs Jour : Referat Zhur - Fizika, No 5, 1957, 11393

Author : Veynberg, V.B., Mal'tsev, Yu.V.
Inst :
Title : Conversion of Radiation Into Electricity.

Orig Pub : Zh. tekhn. fiziki, 1956, 26, No 10, 2373-2377.

Abstract : The authors calculate the characteristics of the optimum operating modes of various types of solar heaters. The heat τ_0 consumed in heating the setup and to operate it is computed. The daily output of electric energy Q is determined in a table for relative efficiencies (the ratio of the efficiency to the Carnot cycle efficiency) of steam generators.

Card 1/1

VLASENKO, N.D., inzh.; MAL'TSEV, Yu.I., inzh.

Pneumatic belt-type grain cleaning machine. Trakt.i sel'-khozmash. no.10:31-32 O '59. (MIRA 13:2)

1. Vserossiyskiy nauchno-issledovatel'skiy institut mekhanizatsii i elektrifikatsii sel'skogo khozyaystva.
(Grain--Cleaning)

Concerning the Heat of Formation of Uranyl Chloride and Mono-Oxyuranyl Trichloride

calculated: $\Delta H_{formation}{}^{UO_2Cl_2} = -301.9$ kcal/mole and

$\Delta H_{formation}{}^{UOCl_3} = -283.4$ kcal/mole.

There are 2 tables and 9 references, 4 of which are Soviet.

SUBMITTED: September 5, 1957

Card 2/2

SOV/78-3-12-9/36

AUTHORS: Shchukarev, S. A., Vasil'kova, I. V., Martynova, N. S., Mal'tsev, Yu. G.

TITLE: Concerning the Heat of Formation of Uranyl Chloride and Mono-Oxyuranyl Trichloride (O teplote obrazovaniya uranilkhlorida i monooksitrikhlorida urana)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1958, Vol 3, Nr 12, pp 2647-2650 (USSR)

ABSTRACT: The heat of solution of UCl_4, UO_2Cl_2, and $UOCl_3$ in a 0.5% $FeCl_3$ and 2% HCl solution was determined. The synthesis of the starting materials is described. The results for the heats of dissolution are given in table 2:

ΔH for $FeCl_3$ in 2% HCl = -30.75±0.27 kcal/mole

ΔH for UO_2Cl_2 in 0.5% $FeCl_3$ in 2% HCl = -25.44±0.07 kcal/mole

ΔH for UCl_4 in 0.5% $FeCl_3$ in 2% HCl = -45.50±0.10 kcal/mole

ΔH for $UOCl_3$ in 0.5% $FeCl_3$ in 2% HCl = -28.55±0.13 kcal/mole.

The standard heat of formation for UO_2Cl_2 and $UOCl_3$ was

Card 1/2

Žurn. techn. fis, 26, fasc. 10, 2373-2377 (1956) CARD 4 / 4 PA - 1508

temperature of 450° C was assumed because the material cannot stand up to the theoretical optimum of temperature.
The yield of electric energy referred to 1 m^2 radiation cross section cannot exceed 100 to 150 watts/hour in the case of steam systems without concentration of solar radiation, and in systems with such concentration it may attain 2 kilowatt hours/m^2. Thermoelectric systems have hitherto yielded only a third or fourth part of these amounts of energy. The degrees of efficiency of sun-steam electric plants found here are a near approach to the values computed by another method in the Energetical Institute of the Academy of Science in the USSR under the supervision of V. A. BAUM.

INSTITUTION:

pend on the ratio between exterior load on resistance and resistance in the pile. At low temperatures it holds that $n \sim 1$, $T_{opt} \sim (T_M + T_o)/2$; the corresponding expression for η_M is given.

In the case of optimum operation it applies in systems constructed for operation at low temperatures that $\eta_N \sim y/2$ and for systems for high temperatures η_N is somewhat higher. In the case of such a mode of operation the heat current abductable from the heater into the heating machine or into the thermopile is analogous to the heat losses of the heater or somewhat higher. Optimum heat transfer can be ascertained by a suitable selection of the vapor consumption of the heating machine or of the length and the cross section of the thermoelectrodes of the thermopile. The characteristics of optimum operating conditions of various types of sun-heating systems were calculated for conditions prevailing during summer in Central Asia; results are shown in a table. The amount of solar energy radiated per day by the sun was assessed at 9 kilowatt hours per m^2, and air temperature was assumed to be + 20^o C. The heat consumption used for heating the apparatus and the period during which the apparatus was in operation were taken into account. The daily yield of electric energy was determined for various degrees of efficiency of the steam generators. In sun heating systems with parabolic mirrors an operating

The function $y = \sum_{\nu=1}^{\nu=k} (k_r/k_\nu) \Delta A_\nu$ is a "collecting coefficient". Here a steady system with $dT/d\tau = 0$ is studied, in which case it is true that $q = k(T_M - T)$. Here T_M denotes the temperature of the heater at $q = 0$, and k has the same value as at the operation temperature T. The system supplies the electric power $P = \eta_o q (T - T_o)/T$ to the consumer. Here η_o denotes the perfection coefficient of the heat machine, namely the ratio between its range of action and the range of action η_k of CARNOT'S cyclic process. If k and η_o are independent of temperature, the degree of efficiency of the transformation is a maximum at $T_{opt} = \sqrt{T_o T_M}$ and it is true that

$$\eta_M = y \eta_o \frac{\sqrt{T_M} - \sqrt{T_o}}{\sqrt{T_M} - \sqrt{T_o}} = \frac{y T_{opt}}{T_{opt} + T_o} \eta_o \frac{T_{opt} - T_o}{T_{opt}}$$

In sun generators the heat current which can be abducted via the thermoelements to the cooler and which is necessary for attaining the electric power output, amounts to $q = k_o (T - T_o)$. Here k_o is the coefficient of the heat transfer of the thermopile.

Next, T_M and η_M are discussed for the special case that $k_o/k = n$ does not de-

MAL'TSEV, Yu.B.

SUBJECT USSR / PHYSICS CARD 1 / 4 PA - 1588
AUTHOR VAJNBERG, V.B., MAL'CEV, JU.B.
TITLE On the Transformation of Radiation into Electricity.
PERIODICAL Žurn.techn.fis, 26, fasc.10, 2373-2377 (1956)
Issued: 11 / 1956

In the course of two previous investigations (A.F.IOFFE, Poluprovodnikovye termoelementy (= semiconductor thermoelements), published by the Academy of Science in the USSR (1956), M.TELKES, Appl.Phys. 25, 8, 1058 (1954)) on the best conditions for the transformation of radiation into electricity by means of heat, the processes in the heater were disregarded. The thermal flow q to be abducted from the heater into the heating machine is connected in the following manner with the radiation current F impinging upon the surface with the temperature T of the heat-abducting surface, and with the temperature T_o of the surrounding air:

$$q = F \sum_{\nu=1}^{\nu=k} (k_r/k_\nu) \Delta A_\nu - k (T - T_o) - c dT/d\tau$$

Here ΔA_ν denote the absorption coefficients of the individual layers of the system, k_ν and k_r - the coefficients of the heat transfer from these layers and from the working material to the surrounding atmosphere; $k = k_r + k_i$ - the ratio between the total heat losses of the heater and the difference in temperature $T - T_o$, τ - the time, c - the effective heat capacity of the heater.

L 61565-65

ACCESSION NR: AP5011527

ENCLOSURE: 01

Fig. 1. Microphotograms obtained from electron diffraction patterns of ammonium chloride, recorded: 1--at room temperature; 2--with cooling for 60 min; 3--with cooling for 90 min, using the protective system; 4--with cooling for 40 min without the protective system.

Card 3/3

L 63565-65

ACCESSION NR: AP5013527

the change in the unit lattice parameters of ammonium chloride as the temperature is reduced. The equipment was used to study peroxide-radical condensates produced by condensation of water vapor. The results are reported by Yu. A. Mal'tsev, I. I. Skorokhodov, and L. I. Nekrasov, in *Zh. fiz. khimii* 37, 2740, 1963. Orig. art. has: 3 figures.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University)

SUBMITTED: 07Oct64 ENCL: 01 SUB CODE: GS, GC

NO REF SOV: 009 OTHER: 008

Card 2/3

L 63565-65 EWT(m)/EPF(c)/EPR/EMP(j)/T Pc-4/Pr-4/Ps-4 RPL WW/HM

ACCESSION NR: AP5013527 UR/0076/65/039/005/1277/1281
541/.545

AUTHOR: Maltsev, Yu. A.; Nekrasov, L. I.; Skorokhodov, I. I.; Oks, N. A. 33 32 B

TITLE: Use of the EM-4 electron diffraction camera for studying products of the low-temperature condensation of dissociated gases and vapors

SOURCE: Zhurnal fizicheskoy khimii, v. 39, no. 5, 1965, 1277-1281

TOPIC TAGS: electron diffraction camera, free radical

ABSTRACT: Free-radical products of the low-temperature condensation of vapors and gases passed through an electric discharge were studied by using an EM-4 electron diffraction camera modified by the addition of a system for cooling the sample and a system for protecting it from contamination (by water vapor or vacuum lubricant). The design and operation of the systems are fully described. The two systems permit electron diffraction studies from 0 to -190°C. The protective system permits experiments at -190°C for 1½ hours without contaminating the sample. This was demonstrated by an analysis of ammonium chloride (see fig. 1 of the Enclosure). A certain change in the interplanar distances shown by these microphotograms is due to

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L 00772-66

ACCESSION NR: AP5012580

preciably (1.5--1.6 eV), although part of the difference can be explained. "We thank I. A. Bayramashvili and G. V. Tsagareyshvili for supplying the crystals of pure boron." Orig. art. has: 2 figures and 1 formula.

ASSOCIATION: none

SUBMITTED: 04Sep64 ENCL: 00 SUB CODE: SS, OP

NR REF SOV: 000 OTHER: 014

Card 2/2

L 00772-66 EWT(1)/EWP(e)/EWT(m)/EWP(i)/T/EWP(t)/EWP(k)/EWD(l)-3 IJP(c) JD

ACCESSION NR: AP5012580 UR/0181/65/007/005/1563/1565

AUTHOR: Dzhamagidze, Sh. Z.; Shvangiradze, R. R.; Mal'tsev, Yu. A.; Gvilava, M. I.

TITLE: Investigation of the edge of intrinsic absorption of boron

SOURCE: Fizika tverdogo tela, v. 7, no. 5, 1965, 1563-1565

TOPIC TAGS: absorption edge, IR spectrometry, absorption coefficient, valence band, conduction band, phonon

ABSTRACT: The authors investigated the edge of intrinsic absorption of spectrally pure crystalline boron of β-rhomobhedral structure with electric resistivity (1--3) x 10^6 ohm-centimeter. The absorption coefficient was determined with an infrared spectrometer (IKS-6) with allowance for multiple reflection. Near the absorption edge, the absorption coefficient is practically constant and is equal to only 2 cm^{-1}, demonstrating the low concentration of the free carriers and scattering centers in the investigated samples. A plot of the square root of the absorption coefficient on the photon energy assumes the form of a broken line, indicating the presence of indirect allowed transitions of the electrons from the valence band to the conduction band, in which phonons participate. The phonon energy is 0.16 eV, corresponding to a rather high Debye temperature of 1855K. The minimum gap between bands is 0.93 eV. This differs from the published data ap-

Card 1/2

POPOV, V.S.; MAL'TSEV, Yu.A.

Small-cosine three-phase wattmeter for commercial and stepped up frequencies. Izm. tekh. no. 3:40-43 Mr '61. (MIRA 14:2)
(Wattmeter)

POPOV, V.S. (Leningrad); SOLOV'YEVA, M.N. (Leningrad); MAL'TSEV, Yu.A. (Leningrad)

Electric current stabilizer. Elektrichestvo no.8:36-39 Ag '60. (MIRA 13:8)

(Electric controllers)